

PART 15 UNLICENSED MODULAR TRANSMITTER APPROVAL

COVER LETTER:

Product Name: Bluetooth 4.0 Module

Brand Name: MINEW

Model Number: MS47SF1, MS47SF2, MS47SF3, MS47SF4, MS47SF5, MS47 series

Applicant: Shenzhen Minew Technologies Co.,Ltd.

5 Floor, H Building, Gangzhilong Science Park, Qinglong Road, Longhua District, Shenzhen City, China

Host Specification during testing:

Model: MS51PX1

Brand Name: MINEW

Manufacturer: Shenzhen Minew Technologies Co.,Ltd.

Test Institution Shenzhen CTL Testing Technology Co., Ltd.

We, Shenzhen CTL Testing Technology Co., Ltd., were authorized by Applicant to test Bluetooth Module in compliance with PART 15 UNLICENSED MODULAR TRANSMITTER APPROVAL 8 requirements of DA 00-1407 stated as follow:

1. The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with Part 15 limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation.
[Please see the internal photo of EUT, the device no covered with shield, it is Limited Modular Approval.](#)
2. The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.
[Please see the block diagram and schematic the applicant use GFSK\(FHSS\) buffered modulation/data inputs on integrated circuit for complying with Part 15 requirements](#)
3. The modular transmitter must have its own power supply regulation. This is intended to ensure that the module will comply with Part 15 requirements regardless of the design of the power supplying circuitry in the device into which the module is installed.
[Please see the circuitry the applicant designed own power supply regulation with power supply integrated circuit in the device.](#)
4. The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The antenna must either be permanently attached or employ a “unique” antenna coupler (at all connections between the module and the antenna, including the cable). Any antenna used with the module must be

approved with the module, either at the time of initial authorization or through a Class II permissive change. The “professional installation” provision of Section 15.203 may not be applied to modules.

[Please see the internal photo of EUT. The antenna is printed on PCB and no consideration of replacement.](#)

5. The modular transmitter must be tested in a host configuration. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see Section 15.27(a)). The length of these lines shall be length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified or commercially available (see Section 15.31(i)).

[Please see the test setup and EUT photos. The applicant has supplied a host configuration to the module transmitter during the test. Please see the top of page 1 statement for the HOST.](#)

6. The modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: XYZMODEL1” or “Contains FCC ID: XYZMODEL1.” Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

[Please see the FCC Statement in user manual.](#)

7. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.247. Compliance with these requirements must be assured.

[Please see the User Manual for more details in which the user and the installer had installation step-by-step instructions on which to learn how to install and verify operation.](#)

8. The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF Exposure compliance in accordance with Section 15.249. Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance.

Please see the FCC Statement in user manual for more details provided specific installation and operated instructions for users, installers and other interested parties to ensure compliance. This module is meant to be installed and operated 20 cm from the user.